Access DB# 125847

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: June 24, 2004
Art Unit: 1774 Phone Number 308-272-1523 Serial Number: 10/692,562
Mail Box and Bldg/Room Location: Remsen 5C75 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: OLED Device With Asymmetric Host

Inventors (please provide full names): Lelia Cosimbescu, William Vreeland, Scott Conley, Jeri Mount

Earliest Priority Filing Date: ~~5/16/2004~~ 10/24/2003

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search formula I for an electroluminescent device.

thank you.

****

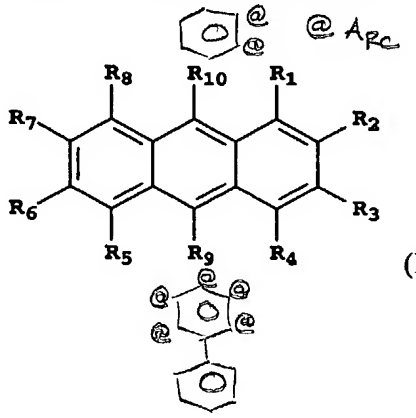
STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: EA	NA Sequence (#)	STN $180.33
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) (1)	Questel/Orbit
Date Searcher Picked Up:	Bibliographic (and)	Dr.Link
Date Completed: 6-30-04	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 5	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time: 70	Other	Other (specify)

PTO-1590 (8-01)

10/692,562

WHAT IS CLAIMED IS:

1. An OLED device comprising an anode and a cathode and located there-between a light emitting layer containing a light emitting dopant and a host comprising a monoanthracene derivative of formula (I):



(I)

wherein

R_1-R_8 are H;

(R_9 is not the same as R_{10};) (be aware this is hard for us to control)

R_9 is a biphenyl group containing no fused rings with aliphatic carbon ring members;

R_{10} is an *ortho*-substituted- or *meta* monosubstituted phenyl group;

provided that R_9 and R_{10} are free of amines and sulfur compounds.

2. The device of claim 1 wherein R_9 is an unsubstituted biphenyl group.

3. The device of claim 1 wherein at least one of the phenyl rings of the biphenyl has a ring fused thereto.

4. The device of claim 1 wherein the biphenyl contains two phenyl ring groups without fused rings.

5. The device of claim 3 wherein the biphenyl is a 2-biphenyl.

6. The device of claim 3 wherein the biphenyl is a 3-biphenyl.

7. The device of claim 3 wherein the biphenyl is a 4-biphenyl.

8. The device of claim 3 wherein all of the phenyl rings are unsubstituted.

9. The device of claim 1 wherein the biphenyl is substituted with at least one substituent selected from fluorine, hydroxy, cyano, and alkyl, alkoxy, aryloxy, aryl, carboxy, trimethylsilyl and heterocyclic oxy groups.

10. The device of claim 1 wherein R_{10} is *ortho*-substituted.

11. The device of claim 10 wherein the ortho substituent is selected from fluorine, hydroxy, cyano, and alkyl, alkoxy, aryloxy, aryl, carboxy, trimethylsilyl and heterocyclic oxy groups.

12. The device of claim 10 wherein the *ortho* substituent is a phenyl group.

13. The device of claim 1 wherein R_{10} is *meta* mono-substituted.

14. The device of claim 13 wherein the substituent is selected from fluorine, hydroxy, cyano, and alkyl, alkoxy, aryloxy, aryl, carboxy, trimethylsilyl and heterocyclic oxy groups.

15. The device of claim 13 where in the *meta* substituent is a phenyl group.

16. The device of claim 13 where in the *meta* substituent is a naphthyl group.

17. The device of claim 13 wherein the *meta* substituent is a biphenyl group.

18. The device of claim 1 wherein there is also present in the light emitting layer a light emitting compound.

19. The device of claim 18 wherein the light emitting compound emits blue light.

20. The device of claim 18 wherein the light emitting compound emits green light.

21. The device of claim 1 including in one or more light emitting layers compounds sufficient for the device to emit white light.

22. The device of claim 1 including a co-host.

23. The device of claim 22 including a polymeric co-host.

24. The device of claim 22 including an oxinoid compound co-host.

25. The device of claim 24 wherein the oxinoid is Alq.

26. A display incorporating the device of claim 1.

27. An area lighting system incorporating the device of claim 1.

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=> file reg
FILE 'REGISTRY' ENTERED AT 21:16:54 ON 30 JUN 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 American Chemical Society (ACS)


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     FILE 'LREGISTRY' ENTERED AT 18:09:59 ON 30 JUN 2004
L1                STR
L2             50 S L1
L3           2529 S L1 FUL
                  SAV L3 YAM353/A
                  E C60H42
L4            144 S E3
                  E C48H34
L5             57 S E3
L6              7 S (L4 OR L5) AND L3

     FILE 'HCAPLUS' ENTERED AT 18:49:28 ON 30 JUN 2004
L7         40169 S IKEDA ?/AU
L8         26029 S ARAI ?/AU
L9          2034 S FUNAHASHI ?/AU
L10         5865 S HOSOKAWA ?/AU
L11            2 S L7 AND L8 AND L9 AND L10
                  SEL L11 1-2 RN

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L12          108 S E1-E108
L13           40 S L12 AND L3
L14       570225 S ?ETHENYL?/CNS
L15           11 S L13 AND L14
                  E C58H46
L16           17 S E3
L17            1 S L15 AND L16

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     FILE 'BEILSTEIN' ENTERED AT 18:57:34 ON 30 JUN 2004
L19               STR L1
L20               STR L1

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L22           88 S L20 SSS FUL SUB=L3
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L23          43 S L22
L24       84014 S (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR
L25          31 S L23 AND L24
                SEL L25 1-31 HIT RN

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L26          73 S E1-E73
L27          21 S C68H48/MF
L28           1 S C55H37I/MF
L29          13 S C90H54/MF
L30           9 S C43H28N2/MF
L31          24 S C46H28/MF
L32          58 S C40H26/MF
L33           6 S C55H38/MF
L34          17 S C70H50/MF
L35          11 S C41H26CL2/MF
L36          40 S C52H34/MF
L37          17 S C52H30/MF
L38          11 S C96H66/MF
L39           3 S C42H28CL2O/MF
L40          23 S C58H38/MF
L41          79 S C42H28/MF
L42           2 S C54H38O/MF
L43           2 S C49H34CL2/MF
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L45           4 S C40H25BR/MF
L46          23 S C66H44/MF
L47           1 S C58H34N2O/MF
L48         366 S L27-L47
L49          32 S L48 AND L26

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L51          22 S L50 AND L24

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L53             STR L19
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L55         113 S L53 SSS FUL SUB=L3
                SAV L55 GAR562/A

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L57          54 S L56 AND L24
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               SAV L60 GAR562A/A
L61         101 S L55 NOT L60

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L63           4 S L62 AND L24

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L65          90 S L61 NOT S/ELS
L66          75 S L64 AND L65
L67          46 S C44H30/MF
L68           2 S C104H72/MF
L69           8 S L66 AND (L67 OR L68 OR L33 OR L46 OR L41)

     FILE 'HCA' ENTERED AT 21:15:59 ON 30 JUN 2004
L70           9 S L69
L71           8 S L70 AND L24
L72          12 S L63 OR L71

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=> d 160 que stat
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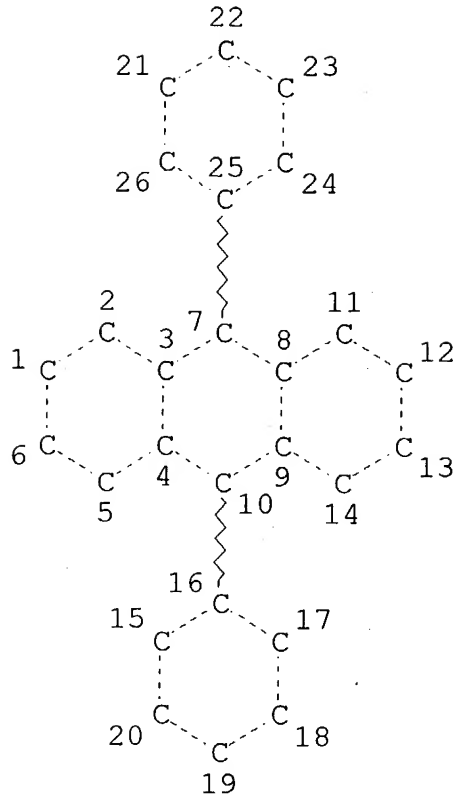

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DEFAULT ECLEVEL IS LIMITED

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RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE
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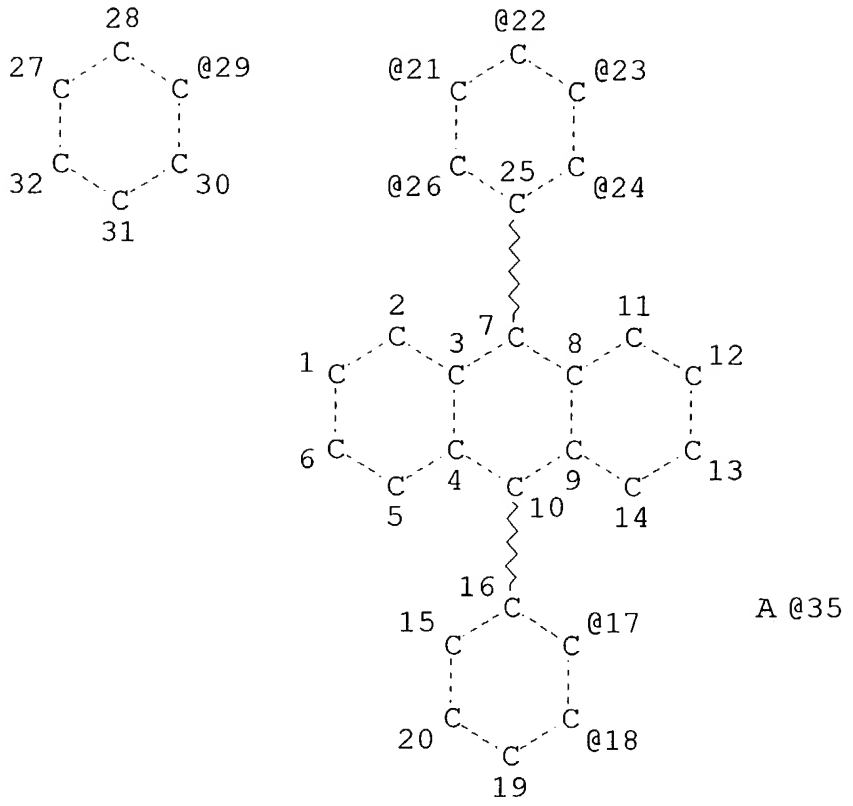
L58 STR



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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 33

STEREO ATTRIBUTES: NONE
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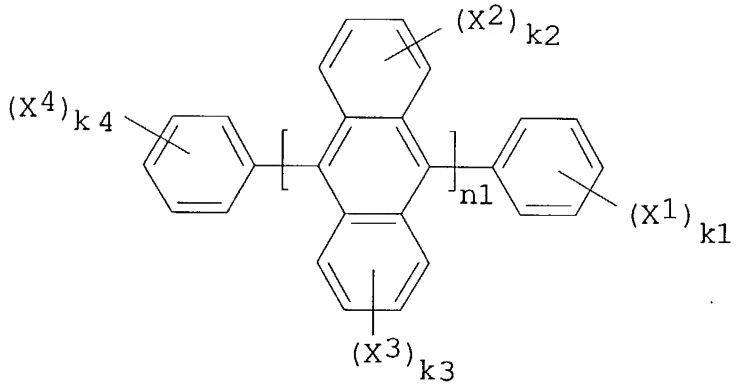
L72 ANSWER 1 OF 12 HCA COPYRIGHT 2004 ACS on STN
139:401372 Organic **electroluminescent** device with anthracenyl derivative in vinyl polymer. Ebisawa, Akira; Shinkai, Masahiro (TDK Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2003338375 A2 20031128, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-69137 20030314. PRIORITY: JP 2002-70125 20020314.
GI

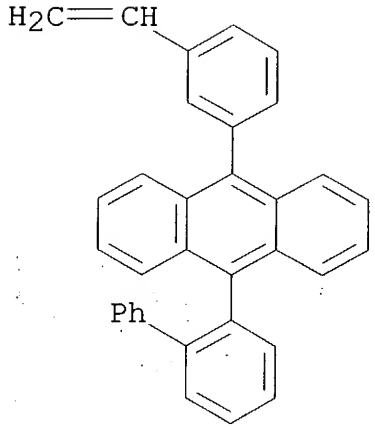


I

AB The invention refers to an org. **electroluminescent** device comprising a 9,10-substituted anthracenyl structure I [X1-4 = substituents; k1,k4 = 0 - 5; k2, k3 = 0 - 4] in a vinyl polymer.
IT **625854-09-3P**
(org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)
RN 625854-09-3 HCA
CN Anthracene, 9-[1,1'-biphenyl]-2-yl-10-(3-ethenylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 625854-08-2
CMF C34 H24



IC ICM H05B033-14
ICS C07C001-32; C07C015-60; C08F012-32; C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **electroluminescent** device vinyl polymer anthracene
IT **Electroluminescent** devices
(blue-emitting; org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)
IT Vinyl compounds, uses
(polymers; org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)
IT 625854-01-5P 625854-05-9P 625854-07-1P **625854-09-3P**
625854-10-6P 625854-14-0P
(org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)
IT 2156-04-9, 4-Vinylphenyl boronic acid 15016-43-0 400607-16-1
522616-11-1 625854-03-7 625854-12-8
(org. **electroluminescent** device with anthracenyl deriv. in vinyl polymer)

L72 ANSWER 2 OF 12 HCA COPYRIGHT 2004 ACS on STN
139:330127 Novel aromatic compound for organic **electroluminescent** device. Ikeda, Hidetsugu; Matsuura, Masahide; Funahashi, Masakazu; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2003087023 A1 20031023, 69 pp. DESIGNATED STATES: W: CN, IN, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2003-JP4905 20030417. PRIORITY: JP 2002-114400 20020417.
GI

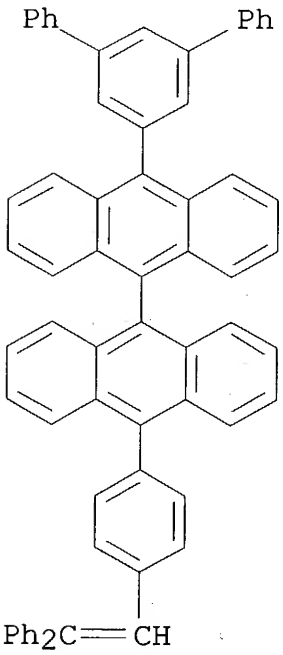
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The invention refers to a novel arom. compd. comprising a anthracene skeleton and an asym. mol. structure A-Ar-B [Ar = (un)substituted anthracenediyl; B = alkenyl- or arylamine-monosubstituted C2-60 heterocycle or (un)substituted C5-60 aryl; A = I, II, III, IV, V, VI, VII, VIII, IX, X, IX; Ar1-3 = (un)substituted C6-30 aryl; Ar4 = (un)substituted C6-30 arylene; Ar5 = (un)substituted C6-30 trivalent arom.; R1,2 - H, halo, hydroxyl, (un)substituted amino, nitro cyano (un)substituted C1-30 alkyl, C2-40 alkenyl, C5-40 cycloalkyl, C1-30 alkoxy, C5-40 arom. hydrocarbon, C2-40 arom. heterocycle, C7-40 aralkyl, C6-40 aryloxy, C2-30 silyl or carboxyl; Ar1,2 and R1,2 may each join together to form rings].

IT **614734-93-9**
(novel arom. compd. for org. **electroluminescent** device)

RN 614734-93-9 HCA

CN 9,9'-Bianthracene, 10-[4-(2,2-diphenylethenyl)phenyl]-10'-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA INDEX NAME)

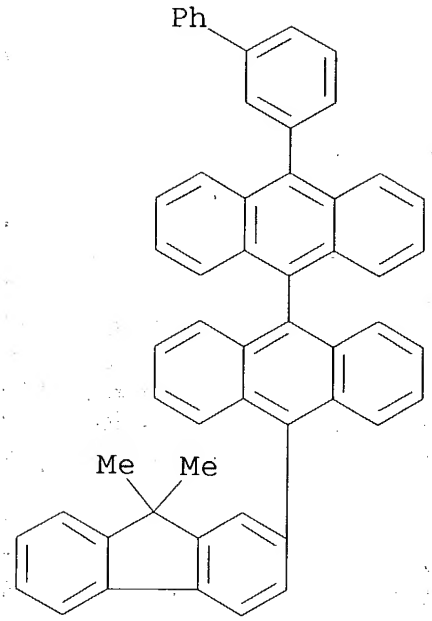


IC ICM C07C015-60
ICS C07C013-66; C07C013-567; C07C211-54; C07D209-86; C07D215-04; C09K011-06; H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25
ST **electroluminescent** device anthracene deriv
IT **Electroluminescent** devices
(novel arom. compd. for org. **electroluminescent** device)
IT Aromatic hydrocarbons, uses
(novel arom. compd. for org. **electroluminescent** device)
IT 614734-91-7 614734-92-8 **614734-93-9**
(novel arom. compd. for org. **electroluminescent** device)
IT 614734-94-0P 614734-96-2P 614735-00-1P 614735-04-5P
614735-06-7P 614735-09-0P 614735-11-4P
(novel arom. compd. for org. **electroluminescent** device)
IT 98-80-6, Phenyl boronic acid 122-39-4, Diphenylamine, reactions
128-08-5, N-Bromosuccinimide 1564-64-3, 9-Bromoanthracene
5122-94-1, 4-Biphenyl boronic acid 22362-86-3, 9-Iodoanthracene
32316-92-0, 2-Naphthalene boronic acid 63503-60-6, 3-Chlorophenyl
boronic acid 117695-55-3 151169-75-4, 3,4-Dichlorophenylboronic
acid 400607-12-7 474688-73-8 614734-95-1 614735-08-9
614735-10-3
(novel arom. compd. for org. **electroluminescent** device)
IT 7424-72-8P, 9-(2-Naphthyl) anthracene 23674-16-0P 158902-12-6P
349666-30-4P 474688-74-9P 478495-51-1P 614734-97-3P
614734-98-4P 614734-99-5P 614735-01-2P 614735-02-3P
614735-03-4P 614735-05-6P
(novel arom. compd. for org. **electroluminescent** device)
IT 614735-07-8P
(novel arom. compd. for org. **electroluminescent** device)

L72 ANSWER 3 OF 12 HCA COPYRIGHT 2004 ACS on STN
139:171119 Organic **electroluminescent** device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon. Totani, Yoshiyuki; Ishida, Tsutomu; Shimamura, Takehiko; Tanabe, Yoshimitsu; Nakatsuka, Masakatsu (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003229273 A2 20030815, 122 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-25736 20020201.
AB The invention refers to an org. **electroluminescent** device comprising one or two fluorene rings directed bonded to an anthracene and a amino-substituted hydrocarbon.
IT **577795-82-5**
(org. **electroluminescent** device comprising coupled anthracene fluorene deriv. and with amino-substituted hydrocarbon)
RN 577795-82-5 HCA
CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-3-yl-10'-(9,9-dimethyl-9H-fluoren-2-yl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
ICS C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device anthracene fluorene

IT **Electroluminescent** devices
(org. **electroluminescent** device comprising coupled anthracene fluorene deriv. and with amino-substituted hydrocarbon)

IT 400605-92-7 400605-99-4 400606-62-4 400606-71-5 400606-72-6
400606-81-7 577795-75-6 577795-76-7 577795-77-8 577795-78-9
577795-79-0 577795-80-3 577795-81-4
(compds. with fluorenes; org. **electroluminescent** device comprising coupled anthracene fluorene deriv. and with amino-substituted hydrocarbon)

IT 96773-85-2 144810-07-1 150220-33-0 150220-36-3 150973-91-4
177799-14-3 177799-15-4 177799-16-5 189263-89-6 189263-91-0
194295-85-7 194295-98-2 194296-12-3 194296-19-0 400606-21-5
400606-86-2 400606-87-3 522615-57-2 **577795-82-5**
577795-83-6 577795-84-7 577795-85-8 577795-86-9 577795-87-0
577795-88-1
(org. **electroluminescent** device comprising coupled anthracene fluorene deriv. and with amino-substituted hydrocarbon)

L72 ANSWER 4 OF 12 HCA COPYRIGHT 2004 ACS on STN

137:343711 Organic **EL** element and compound having benzofluoranthene derivatives used therein. Fujita, Tetsuji; Kitagawa, Sumiko; Inoue, Tetsushi (TDK Corporation, Japan). PCT Int. Appl. WO 2002085822 A1 20021031, 331 pp. DESIGNATED STATES: W: CN, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP3925 20020419. PRIORITY: JP 2001-121788 20010419.

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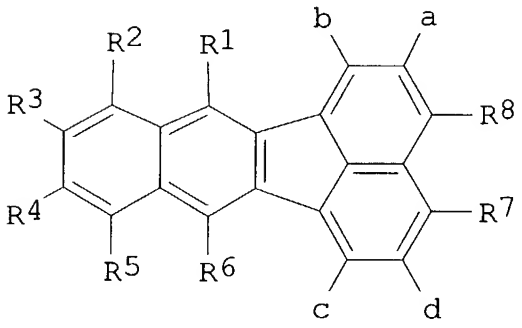


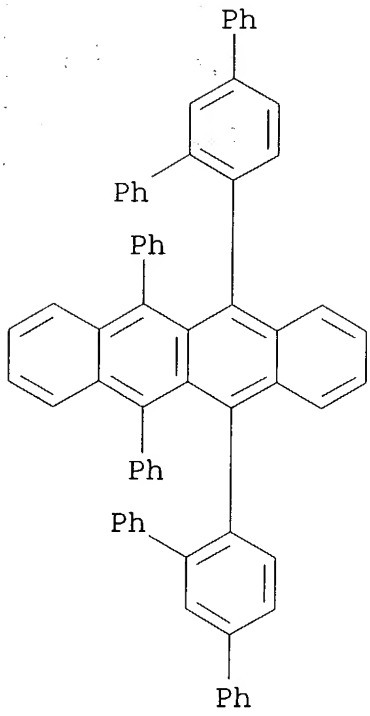
I

AB Title compd. is represented by a general formula XnY [X = I; Y = a single bond or (un)substituted aryl or heterocyclic linkage; n = 2 or 3; R1-8, a - d = H, alkyl, (un)subsituted aryl, allyl, heterocyclyl, or arylamino, or amino]. The compd. offers an excellent durability and an excellent color purity with great satisfactory luminescent performance.

IT **368884-55-3P**
(**light emitting** layer; **electroluminescent** devices having benzofluoranthene derivs.)

RN 368884-55-3 HCA

CN Naphthacene, 5,12-diphenyl-6,11-bis([1,1':3',1''-terphenyl]-4'-yl)- (9CI) (CA INDEX NAME)



IC ICM C07C013-62
ICS C07C211-54; C07C211-61; C09K011-06; C07D213-06; C07D333-08; C07D333-76; H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 24, 76

ST benzofluoranthene deriv **electroluminescent** device

IT **Electroluminescent** devices
(benzofluoranthene derivs. of)

IT 2085-33-8P 172285-83-5P 175606-05-0P 474266-91-6P 474266-92-7P 474266-93-8P 474266-94-9P
(**electroluminescent** devices having benzofluoranthene derivs.)

IT 5471-63-6P 7267-03-0P 81090-53-1P 187086-32-4P 276249-59-3P
(**electroluminescent** devices having benzofluoranthene derivs.)

IT 203007-32-3P
(hole injection layer; **electroluminescent** devices having benzofluoranthene derivs.)

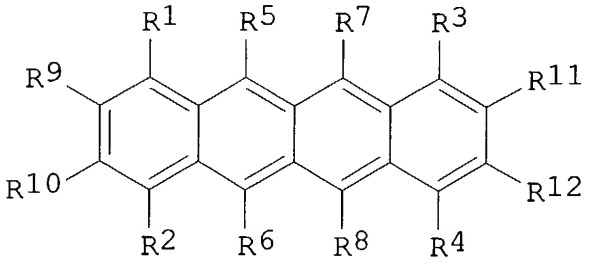
IT 169224-61-7P
(hole transporting layer; **electroluminescent** devices having benzofluoranthene derivs.)

IT 16391-62-1P 216066-60-3P 249288-65-1P 272459-50-4P **368884-55-3P**

(**light emitting** layer;
electroluminescent devices having benzofluoranthene derivs.)

L72 ANSWER 5 OF 12 HCA COPYRIGHT 2004 ACS on STN
136:286307 Naphthacene derivatives, organic **electroluminescent** devices and materials using them. Kanno, Masaki; Suda, Yasumasa; Onikubo, Shunichi (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002097465 A2 20020402, 39 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-289680 20000925.

GI



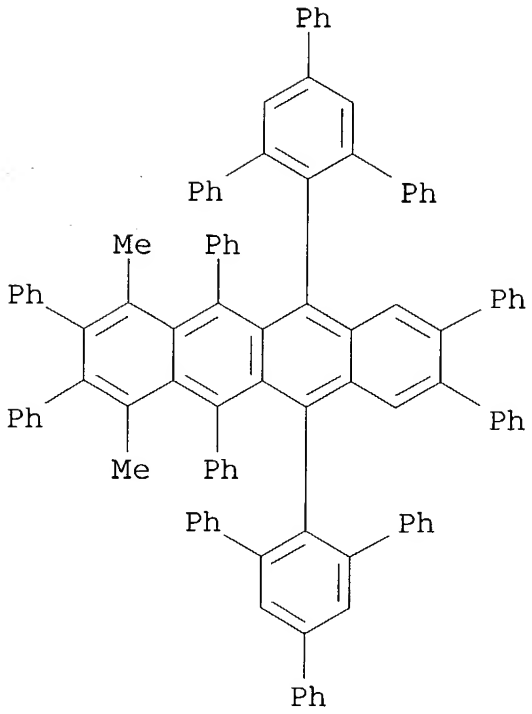
I

AB The invention relates to an org. **electroluminescent** device comprising a general formula I [R1-12 = H, halo, or (un)substituted org. residue groups selected from alkyl, aryl, alkoxy, aryloxy, alkylthio, arylthio, amino and heterocyclyl; adjacent substituents of R1-12 may form a ring; ≥7 R1-12 are (un)substituted aryl; R1-4 can not be H simultaneously].

IT **405881-67-6P**
(naphthacene derivs., org. **electroluminescent** devices and materials using them)

RN 405881-67-6 HCA

CN Naphthacene, 1,4-dimethyl-2,3,5,8,9,12-hexaphenyl-6,11-bis(5'-phenyl[1,1':3',1''-terphenyl]-2'-yl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS C09K011-06; H05B033-14; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25
ST naphthacene deriv **electroluminescent** device
IT **Electroluminescent** devices
(naphthacene derivs., for)
IT Fluorescent substances
(naphthacene derivs., org. **electroluminescent** devices and materials using them)
IT 154-87-0, TDP 574-93-6, Phthalocyanine 808-57-1, 2,3,6,7,10,11-Hexamethoxytriphenylene 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 2085-33-8, Alq3 7789-24-4, Lithium fluoride, uses 19205-19-7, N,N'-Dimethylquinacridone 24936-68-3, Panlite K 1300, uses 37197-21-0 38215-36-0 51325-91-8 90473-15-7 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl 124729-98-2 142289-08-5 177799-15-4 182507-83-1 188049-39-0 244280-90-8
(naphthacene derivs., org. **electroluminescent** devices and materials using them)
IT 405880-13-9P 405880-18-4P 405880-24-2P 405880-29-7P 405880-34-4P 405880-39-9P 405880-45-7P 405880-52-6P 405880-57-1P 405880-63-9P 405880-68-4P 405880-74-2P

405880-78-6P 405880-81-1P 405880-86-6P 405880-89-9P
405880-95-7P 405880-99-1P 405881-03-0P 405881-09-6P
405881-13-2P 405881-18-7P 405881-24-5P 405881-33-6P
405881-40-5P 405881-45-0P 405881-51-8P 405881-57-4P
405881-62-1P 405881-64-3P **405881-67-6P** 405881-70-1P
405881-73-4P 405881-79-0P 405881-83-6P 405881-87-0P
405881-91-6P 405881-98-3P 405882-07-7P
(naphthacene derivs., org. **electroluminescent** devices and materials using them)

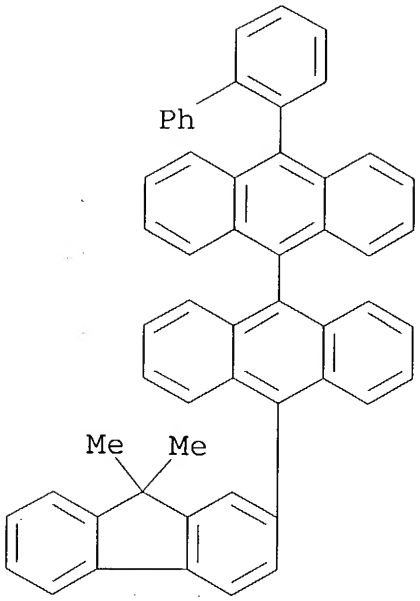
IT 104-15-4, reactions 540-49-8, 1,2-Dibromoethylene 3586-66-1 405882-19-1
(naphthacene derivs., org. **electroluminescent** devices and materials using them)

L72 ANSWER 6 OF 12 HCA COPYRIGHT 2004 ACS on STN
136:191499 Hydrocarbon compound for organic **electroluminescent** elements and using them. Ishida, Tsutomu; Shimamura, Takehiko; Totani, Yoshiyuki; Nakatsuka, Masakatsu (Mitsui Chemicals, Inc., Japan). PCT Int. Appl. WO 2002014244 A1 20020221, 251 pp. DESIGNATED STATES: W: KR, US; RW: DE, FR, NL. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP6920 20010810. PRIORITY: JP 2000-242476 20000810; JP 2000-268568 20000905.

AB Title **electroluminescent** elements comprise one pair of electrodes and pinched between the electrodes, ≥ 1 layer(s) contg. ≥1 novel hydrocarbon compd. in a general formula X1(F1)j(A1)k(F2)l(A2)m(F3)nX2 [A1-2 = (un)substituted anthracenediyl; F1-3 = (un)substituted fluorenediyl; X1-2 = H, halo, straight, branched or cyclic alkyl, alkoxy, amino, aryl, or (un)substituted amino, aryl or aralkyl, j,m,n = 0, 1; k,l = 1, 2] having an anthracene ring and a fluorene ring which are directly bonded with each other. The compd. can be suitably used for prepg. an org. **electroluminescent** element being excellent in luminous efficiency and having a long luminous life.

IT **400606-22-6**
(prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

RN 400606-22-6 HCA
CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-2-yl-10'-(9,9-dimethyl-9H-fluoren-2-yl)- (9CI) (CA INDEX NAME)



IC ICM C07C013-58
ICS C07C025-22; C07C043-235; C07C211-53; C07C211-61; C09K011-06; C07D213-16; C07D333-18; C07D215-04; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 24, 74

ST anthracene fluorene **electroluminescent** device

IT **Electroluminescent** devices
(prepn. of hydrocarbon compd. contg. anthracene and fluorene for)

IT Fluorescent substances
(prepn. of hydrocarbon compd. contg. anthracene and fluorene for **EL** devices)

IT Hydrocarbons, uses
(prepn. of hydrocarbon compd. contg. anthracene and fluorene for **EL** devices)

IT 2085-33-8
(electron injection/transport layer; prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

IT 38215-36-0
(green **light-emitting** component; prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

IT 65181-78-4 124729-98-2
(hole injection/transport layer; prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

IT 24601-13-6 146162-48-3 146162-54-1
(**light-emitting** layer contg.; prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

IT 51325-91-8, DCM 1
(orange **light-emitting** component; prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

IT 14221-01-3, Tetrakis(triphenylphosphine)palladium 25067-59-8
138372-67-5 150405-69-9
(prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

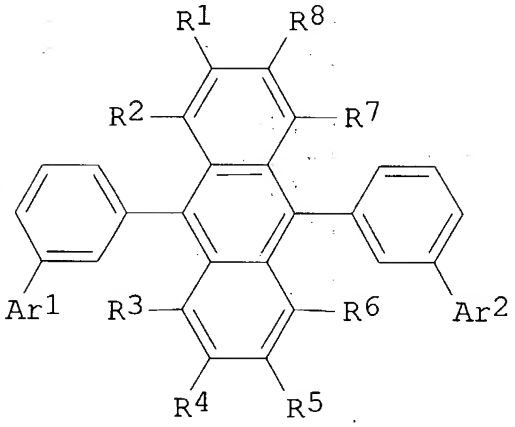
IT 400605-76-7 400605-78-9 400605-79-0 400605-81-4 400605-82-5
400605-84-7 400605-85-8 400605-87-0 400605-88-1 400605-90-5
400605-92-7 400605-94-9 400605-96-1 400605-97-2 400605-99-4
400606-00-0 400606-02-2 400606-03-3 400606-04-4 400606-06-6
400606-07-7 400606-08-8 400606-09-9 400606-10-2 400606-11-3
400606-12-4 400606-14-6 400606-15-7 400606-17-9 400606-18-0
400606-19-1 400606-20-4 400606-21-5 **400606-22-6**
400606-23-7 400606-24-8 400606-26-0 400606-28-2 400606-30-6
400606-32-8 400606-34-0 400606-35-1 400606-37-3 400606-39-5
400606-41-9 400606-43-1 400606-45-3 400606-47-5 400606-48-6
400606-49-7 400606-50-0 400606-51-1 400606-52-2 400606-53-3
400606-54-4 400606-55-5 400606-56-6 400606-57-7 400606-58-8
400606-59-9 400606-60-2 400606-61-3 400606-62-4 400606-63-5
400606-64-6 400606-65-7 400606-66-8 400606-67-9 400606-68-0
400606-69-1 400606-70-4 400606-71-5 400606-72-6 400606-73-7
400606-74-8 400606-75-9 400606-76-0 400606-77-1 400606-78-2
400606-79-3 400606-80-6 400606-81-7 400606-82-8 400606-83-9
400606-84-0 400606-85-1 400606-86-2 400606-87-3 400606-88-4
400606-89-5 400606-90-8 400606-91-9 400606-92-0 400606-93-1
400606-94-2 400606-95-3 400606-96-4 400606-97-5 400606-98-6
(prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

IT 523-27-3 23673-92-9 23674-20-6 121848-75-7 144981-86-2
144981-88-4 145005-98-7 158902-11-5 278176-05-9 333432-28-3
334658-75-2 371193-08-7 400606-99-7 400607-00-3 400607-01-4
400607-02-5 400607-03-6 400607-04-7 400607-05-8 400607-06-9
400607-07-0 400607-08-1 400607-09-2 400607-10-5 400607-11-6
400607-12-7 400607-13-8 400607-14-9 400607-15-0 400607-16-1
400607-17-2 400607-18-3 400607-19-4 400607-20-7 400607-21-8
400607-22-9 400607-23-0 400607-24-1 400607-25-2 400607-26-3
400607-27-4 400607-28-5 400607-29-6 400607-30-9 400607-31-0
400607-32-1 400607-33-2 400607-34-3 400607-35-4 400607-36-5
400607-37-6 400607-38-7 400607-39-8 400607-40-1 400607-41-2
400607-42-3 400607-43-4 400607-44-5 400607-45-6 400607-46-7
400607-47-8 400607-48-9 400607-49-0 400607-50-3 400607-51-4
400607-52-5 400607-53-6 400607-54-7 400607-55-8 400607-56-9
400607-57-0 400607-58-1 400607-59-2 400607-60-5 400607-61-6
400607-62-7 400607-63-8 400607-64-9 400607-65-0 400607-66-1
400607-67-2 400607-68-3 400607-69-4 400607-70-7 400607-71-8
400607-72-9 400607-73-0 400607-74-1 400607-75-2 400607-76-3
400607-77-4 400607-78-5 400607-79-6 400607-80-9 400607-81-0

(prepn. of hydrocarbon compd. for org. **electroluminescent** devices)

L72 ANSWER 7 OF 12 HCA COPYRIGHT 2004 ACS on STN
136:29029 Organic **electroluminescent** component. Ikeda, Shuji; Arai, Hiromasa; Funahashi, Masakazu; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001335516 A2 20011204, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-339938 20001108. PRIORITY: JP 1999-316555 19991108; JP 2000-80159 20000322.

GI



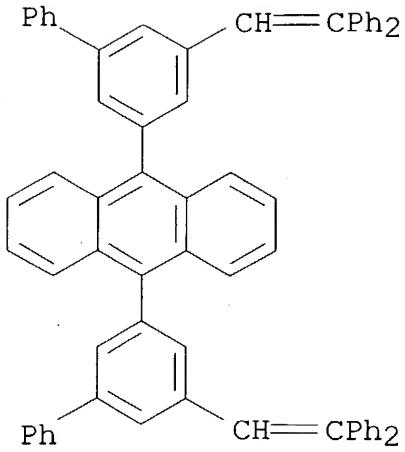
I

AB The invention refers to an org. **electroluminescent** device comprising the novel compd. I [R1-9 - H, halo cyano, nitro, (un)substituted C1-20 alkyl, alkoxy, C6-30 aryloxy, C1-20 alkylthio, C6-30 arylthio, C7-30 arylalkyl, C5-30 monocyclic, or C10-30 condensed polycyclic; Ar3,4 = (un)substituted C6-30 aryl, C1-20 alkyl, alkoxy, C6-30 aryloxy, C1-20 alkylthio, C6-30 arylthio, C6-30 arylalkyl, C5-30 monocyclic, C10-30 condensed polycyclic, or C5-30 heterocyclic, however Ar3,4 may not be unsubstituted Ph groups].

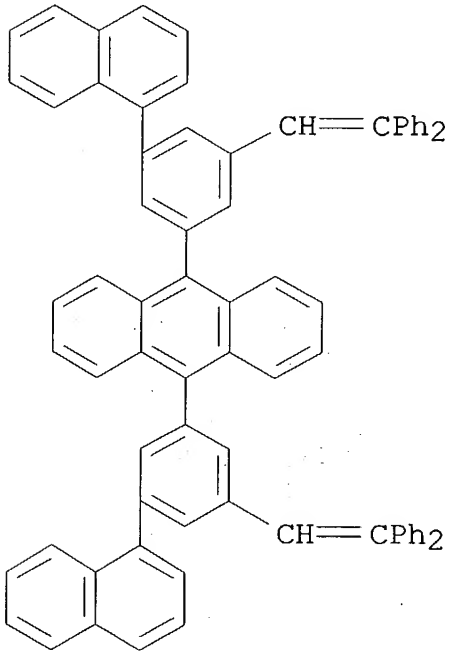
IT **377738-16-4P 377738-20-0P 377738-27-7P**
(org. **electroluminescent** component)

RN 377738-16-4 HCA

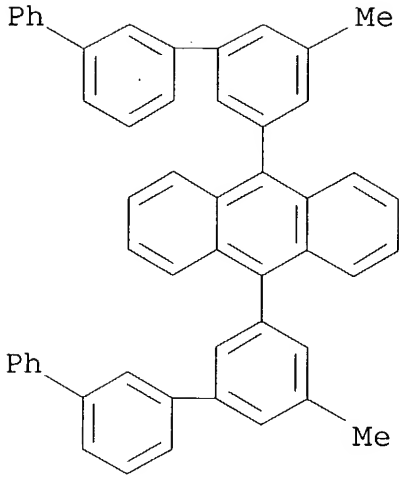
CN Anthracene, 9,10-bis[5-(2,2-diphenylethenyl)[1,1'-biphenyl]-3-yl]- (9CI) (CA INDEX NAME)



RN 377738-20-0 HCA
CN Anthracene, 9,10-bis[3-(2,2-diphenylethenyl)-5-(1-naphthalenyl)phenyl]- (9CI) (CA INDEX NAME)



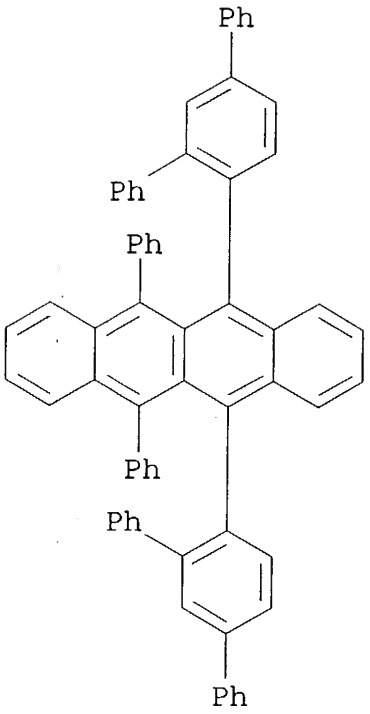
RN 377738-27-7 HCA
CN Anthracene, 9,10-bis(5-methyl[1,1':3',1''-terphenyl]-3-yl)- (9CI) (CA INDEX NAME)



IC ICM C07C015-27
ICS C07C015-38; C07C015-60; C09K011-06; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
ST **electroluminescent** device
IT **Electroluminescent** devices
(org. **electroluminescent** component)
IT 55035-42-2P 377737-84-3P 377737-87-6P 377737-91-2P
377737-95-6P 377738-03-9P 377738-04-0P 377738-06-2P
377738-09-5P 377738-12-0P **377738-16-4P**
377738-20-0P 377738-23-3P 377738-26-6P
377738-27-7P 377738-29-9P 377738-30-2P
(org. **electroluminescent** component)
IT 84-65-1, Anthraquinone 98-80-6, Phenyl boronic acid 573-17-1, 9-Bromophenanthrene 583-53-9, 1,2-Dibromobenzene 583-55-1, 2-Bromoiodobenzene 589-87-7, 4-Bromoiodobenzene 591-18-4, 3-Bromoiodobenzene 2052-07-5, 2-Bromobiphenyl 5419-55-6, Tri-isopropoxy boron 13922-41-3, 1-Naphthalene boronic acid 14221-01-3, Palladium tetrakis(triphenylphosphine) 18648-66-3 31093-44-4, Naphthalene boronic acid 51364-51-3, Tris(dibenzylidene acetone) dipalladium 54590-37-3 56990-02-4, 3,5-Dibromobenzaldehyde 116941-52-7 164461-18-1 377737-93-4
(org. **electroluminescent** component)
IT 131-09-9P, 2-Chloroanthraquinone 4688-76-0P, 2-Biphenyl boronic acid 6485-97-8P, 2-Phenylanthraquinone 13029-09-9P, 2,2'-Dibromobiphenyl 18937-92-3P 22082-99-1P, 2-(4-Bromophenyl)naphthalene 24253-37-0P 68572-87-2P, 9-Phenanthrene boronic acid 75295-57-7P 345924-29-0P, 1-(4-Bromophenyl)pyrene 377737-83-2P 377737-85-4P 377737-89-8P 377737-90-1P 377737-92-3P 377738-02-8P 377738-07-3P 377738-10-8P 377738-13-1P 377738-14-2P 377738-15-3P

377738-17-5P 377738-18-6P 377738-22-2P
(org. **electroluminescent** component)
IT 377738-25-5P
(org. **electroluminescent** component)

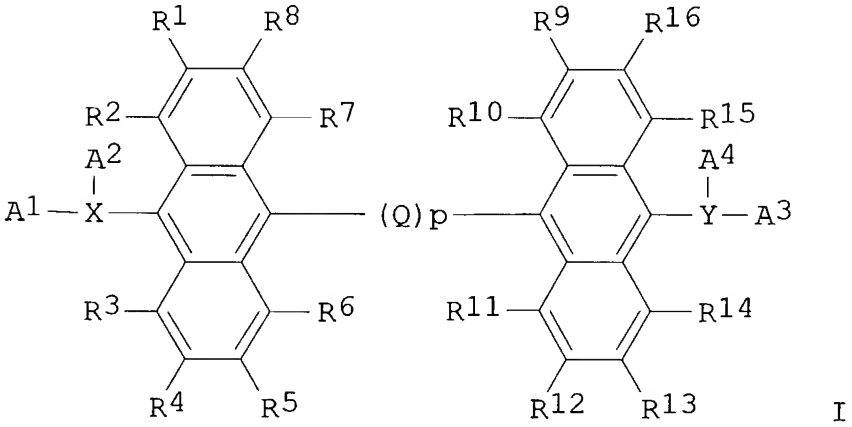
L72 ANSWER 8 OF 12 HCA COPYRIGHT 2004 ACS on STN
135:325085 Organic **electroluminescent** device. Ara, Kensuke; Inque, Tetsushi; Fujita, Tetsuji (Tdk Corp., Japan). Eur. Pat. Appl. EP 1148109 A2 20011024, 327 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-303660 20010420. PRIORITY: JP 2000-121724 20000421; JP 2001-121664 20010419.
AB Org. **electroluminescent** devices comprising org. layers between a pair of electrodes participating in at least a **light emitting** function are described in which ≥1 org. layer contains ≥1 naphthacene, tetraaryldiamine, anthracene, and/or quinoxaline deriv. (e.g., as a host material) and ≥1 fluoranthene deriv., esp. a diindeno[1,2,3-cd:1',2',3'-lm]perylene deriv. (e.g., as a dopant).
IT **368884-55-3**
(org. **electroluminescent** devices using fluoranthene deriv.-doped materials)
RN 368884-55-3 HCA
CN Naphthacene, 5,12-diphenyl-6,11-bis([1,1':3',1''-terphenyl]-4'-yl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, 76
ST org **electroluminescent** device fluoranthene deriv dopant; anthracene deriv host fluoranthene deriv dopant org **electroluminescent** devic; quinoxaline deriv host fluoranthene deriv dopant org **electroluminescent** devic; naphthacene deriv host fluoranthene deriv dopant org **electroluminescent** devic; tetraaryldiamine deriv host fluoranthene deriv dopant org **electroluminescent** devic
IT **Electroluminescent** devices
(org.; org. **electroluminescent** devices using fluoranthene deriv.-doped materials)
IT 517-51-1 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses 50926-11-9, ITO 161453-00-5 203007-32-3 216066-60-3 272459-50-4 312497-16-8 **368884-55-3** 368884-56-4 368884-58-6
(org. **electroluminescent** devices using fluoranthene deriv.-doped materials)
IT 169224-61-7 175606-05-0 219318-86-2 368884-57-5
(org. **electroluminescent** devices using fluoranthene deriv.-doped materials)

L72 ANSWER 9 OF 12 HCA COPYRIGHT 2004 ACS on STN
135:280171 Anthracene derivatives and organic **electroluminescent** devices made by using the same. Hosokawa, Chishio; Ikeda, Hidetsugu; Funahashi, Masakazu (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001072673 A1 20011004, 71 pp. DESIGNATED STATES: W: CN, IN, JP, KR; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP2330 20010323. PRIORITY: JP 2000-90644 20000329; JP 2000-319297 20001019.

GI



I

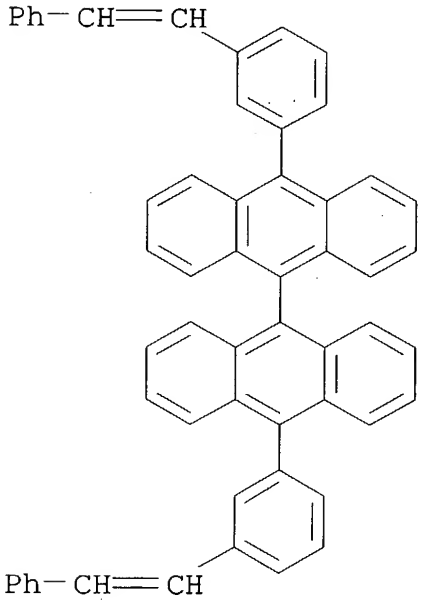
AB Anthracene derivs. (I); and org. **electroluminescent**(**EL**) devices each having at least an org. **light-emitting** layer sandwiched between a pair of electrodes and contg. the derivs. [wherein X and Y are each a trivalent group derived from an arom. ring; (1) A1 to A4 are each aryl or a monovalent heterocyclic group or (2) A1 and A3 are each H, and A2 and A4 are each styryl whose Ph moiety may be substituted and which may be substituted by C1-30 alkyl at the α- or β-position; R1 to R16 are each H, halo, cyano, nitro, alkyl, or the like; Q is arylene or the like; and p is 0, 1, or 2]. The anthracene derivs. exhibit high **light emitting** efficiency and heat resistance, when used as the **light-emitting** constituent of org. **EL** devices.

IT **363609-67-0 363609-68-1 363609-70-5 363609-71-6**
(anthracene derivs. and org. **electroluminescent** devices made by using the same)

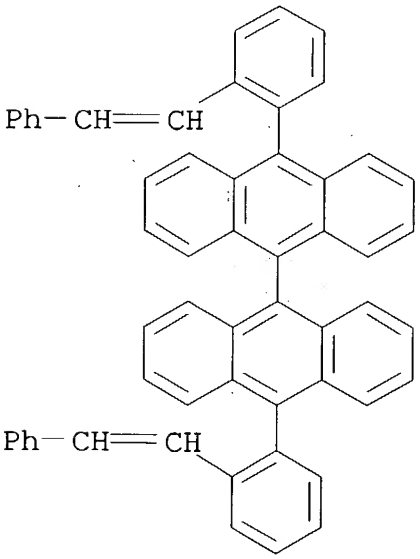
RN 363609-67-0 HCA

CN 9,9'-Bianthracene, 10,10'-bis[3-(2-phenylethenyl)phenyl]- (9CI) (CA

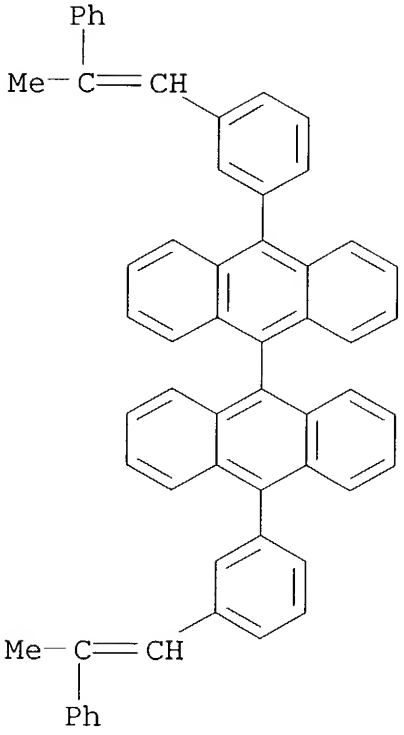
INDEX NAME)



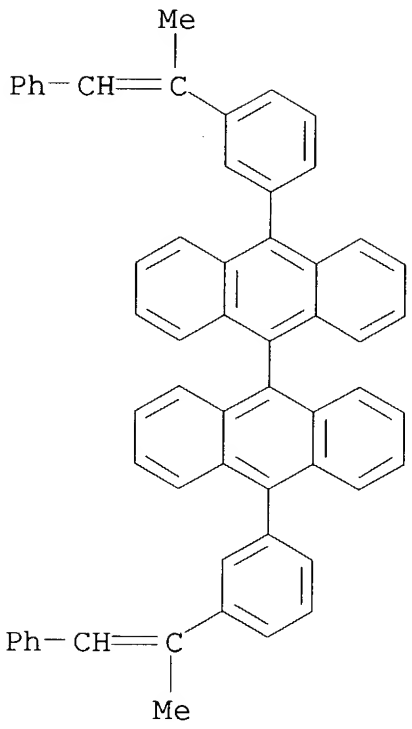
RN 363609-68-1 HCA
CN 9,9'-Bianthracene, 10,10'-bis[2-(2-phenylethenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 363609-70-5 HCA
CN 9,9'-Bianthracene, 10,10'-bis[3-(2-phenyl-1-propenyl)phenyl]- (9CI) (CA INDEX NAME)



RN 363609-71-6 HCA
CN 9,9'-Bianthracene, 10,10'-bis[3-(1-methyl-2-phenylethenyl)phenyl]-
(9CI) (CA INDEX NAME)



IC ICM C07C015-27
ICS C07C013-547; C07C013-19; C07C255-51; C07C015-60; C07C013-45; C07D215-06; C07D285-12; C07D207-32; C07D241-42; C07D333-68; C07D209-86; C07D213-06; C07D223-28; C07D223-26; C07D249-02; C09K011-06; H05B033-14; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25

ST anthracene deriv org **electroluminescent** device

IT **Electroluminescent** devices
Thermal resistance
(anthracene derivs. and org. **electroluminescent** devices made by using the same)

IT 120-12-7, Anthracene, uses 2085-33-8, Tris(8-quinolinolato)aluminum 7429-90-5, Aluminum, uses 50926-11-9, ITO 65181-78-4, TPD 123847-85-8, α-NPD 231606-50-1 363609-60-3 363609-61-4 363609-62-5 363609-63-6 363609-64-7 363609-65-8 363609-66-9 **363609-67-0 363609-68-1** 363609-69-2 **363609-70-5 363609-71-6** 363609-72-7
(anthracene derivs. and org. **electroluminescent** devices made by using the same)

IT 7439-93-2, Lithium, uses

(anthracene derivs. and org. **electroluminescent** devices made by using the same)

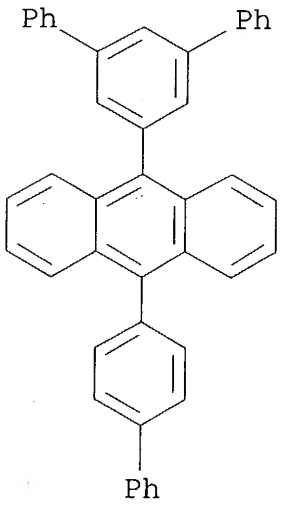
L72 ANSWER 10 OF 12 HCA COPYRIGHT 2004 ACS on STN
133:259476 Amino or styryl compound, organic thin film, and **electroluminescent** device. Hosokawa, Chishio; Funahashi, Masakazu; Azuma, Hisahiro; Ikeda, Shuji; Arai, Hiromasa (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000273056 A2 20001003, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-352216 19991210. PRIORITY: JP 1999-10660 19990119.

AB The compd. comprises D1Ar1X1(X2)n (I; Ar1 = C6-30 di- or trivalent arom. group; X1, X2 = styryl, styrylaryl, diarylamino, diarylaminoaryl; n = 0, 1; if X1 or X2 = the styryl group, then D1 = C16-60 arom. group having ≥4 carbon rings; if X1 and X2 = the amino group, then D1 = C20-60 arom. group having ≥5 carbon rings). I shows good heat resistance (glass transition temp. ≥90°) and long luminescence lifetime.

IT **294881-41-7**
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

RN 294881-41-7 HCA

CN Anthracene, 9-[1,1'-biphenyl]-4-yl-10-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA INDEX NAME)



IC ICM C07C015-60
ICS C07C211-54; C07C211-57; C07D209-86; C07D223-24; C09K011-06; H05B033-14; H05B033-22

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 25, 73

ST **electroluminescent** device polycyclic amino styryl compd;

heat resistant thin film **electroluminescent** compd

IT **Electroluminescent** devices
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

IT Phosphors
(**electroluminescent**; amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

IT 294881-17-7P 294881-18-8P 294881-21-3P 294881-24-6P
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

IT 294881-22-4P 294881-23-5P 294881-26-8P 294881-27-9P
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

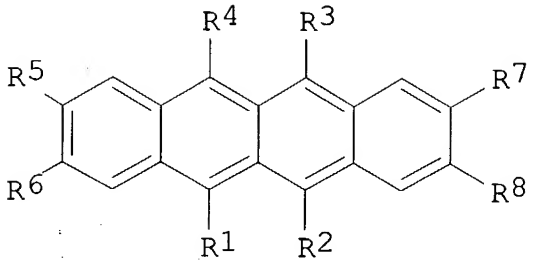
IT 279672-13-8 294881-28-0 294881-29-1 294881-30-4 294881-31-5
294881-32-6 294881-33-7 294881-34-8 294881-35-9 294881-36-0
294881-37-1 294881-38-2 294881-39-3 294881-40-6
294881-41-7 294881-42-8 294881-43-9 294881-44-0D,
fluorene derivs. 294881-45-1
(amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

IT 5101-27-9P, 1-Phenylpyrene 23674-20-6P, 9-Bromo-10-phenylanthracene 36809-26-4P, 4-Bromotriphenylamine 202831-65-0P
294881-19-9P 294881-20-2P 294881-47-3P
(in prepn. of amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

IT 92-86-4, 4,4'-Dibromobiphenyl 106-37-6, 1,4-Dibromobenzene
108-86-1, Bromobenzene, reactions 122-39-4, Diphenylamine, reactions 523-27-3, 9,10-Dibromoanthracene 602-55-1, 9-Phenylanthracene 626-39-1, 1,3,5-Tribromobenzene 776-74-9, α-Bromodiphenylmethane 1714-29-0, 1-Bromopyrene
103068-20-8 173678-07-4, 3,5-Di(1-naphthyl)bromobenzene
201734-64-7 294881-25-7
(in prepn. of amino or styryl compd. for heat-resistant org. thin film or **electroluminescent** device)

L72 ANSWER 11 OF 12 HCA COPYRIGHT 2004 ACS on STN
131:329672 Compounds for organic **electroluminescent** device.
Fujita, Tetsuji; Inoue, Tetsushi; Aotani, Junji (TDK Corporation, Japan). PCT Int. Appl. WO 9957221 A1 19991111, 100 pp. DESIGNATED STATES: W: US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP2335 19990430. PRIORITY: JP 1998-137505 19980501.

GI



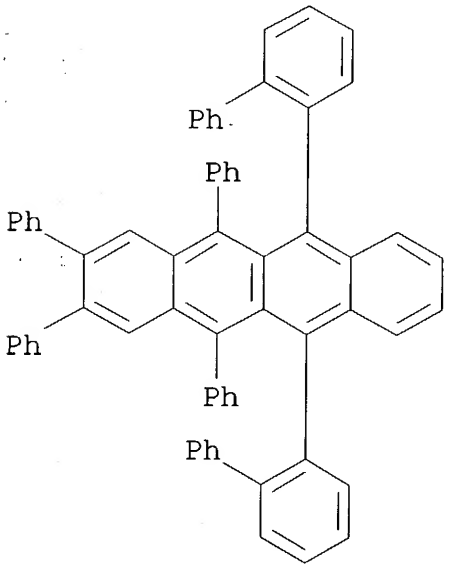
I

AB The invention relates to a compd. for making a highly durable org. **electroluminescent** device which emits at a sufficient brightness esp. at long wavelengths and retains the satisfactory luminescent performance for long time of periods. Thus the compds. have a basic skeleton represented by I [R1-8 = H, aryl and alkenyl groups; provided that at least 6 of R1 to R8 are aryl and alkenyl groups].

IT **249512-81-0**
(compds. for org. **electroluminescent** device)

RN 249512-81-0 HCA

CN Naphthacene, 6,11-bis([1,1'-biphenyl]-2-yl)-2,3,5,12-tetraphenyl- (9CI) (CA INDEX NAME)

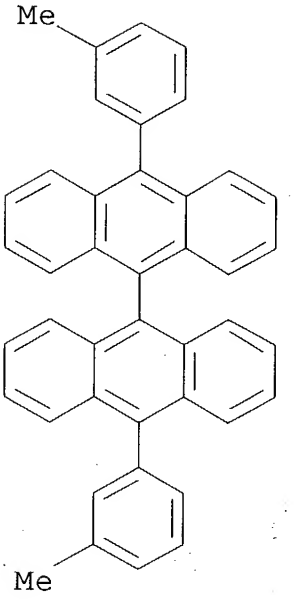


IC ICM C09K011-06
ICS C07C015-38; C07C015-62; C07C211-54; C07C211-58; C07C211-50; C07C043-20; C07C043-257; H05B033-14

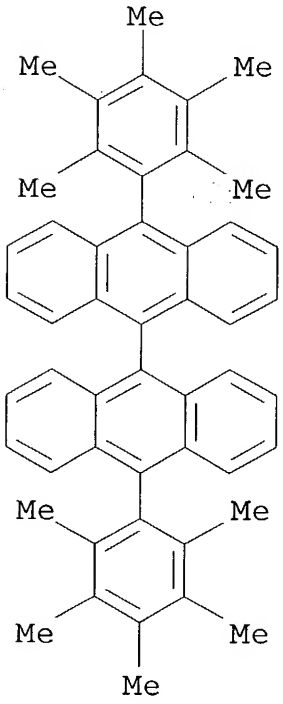
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
ST org **electroluminescent** device naphthacene rubrene
IT **Electroluminescent** devices
(compds. for org. **electroluminescent** device)
IT 249512-71-8 249512-76-3 249512-79-6 249512-80-9
249512-81-0
(compds. for org. **electroluminescent** device)
IT 106-51-4, 1,4-Benzoquinone, reactions 2548-47-2,
2,3-Diphenylbutadiene 4070-75-1, Dibenzoylethylene 5471-63-6,
1,3-Diphenylisobenzofuran
(compds. for org. **electroluminescent** device)
IT 249512-73-0P 249512-74-1P 249512-75-2P
(compds. for org. **electroluminescent** device)

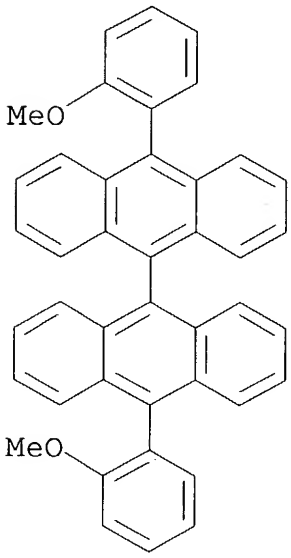
L72 ANSWER 12 OF 12 HCA COPYRIGHT 2004 ACS on STN
124:71121 Phenylanthracene derivative and organic **EL** element.
Inoue, Tetsushi; Nakaya, Kenji (TDK Corp., Japan). Eur. Pat. Appl. EP 681019 A2 19951108, 73 pp. DESIGNATED STATES: R: DE, FR, GB, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1995-302767 19950425. PRIORITY: JP 1994-110569 19940426.
AB Phenylanthracene derivs. of the formula A1-L-A2 (A1 and A2 each are a monophenylanthryl or diphenylanthryl group and L is a valence bond or a divalent linkage group, typically arylene) are described. Their use as org. compd. layers of org. **electroluminescent** (**EL**) devices, esp. as **light-emitting** layers for blue **light emission** or as electron injecting and transporting layers, is indicated.
IT **172285-80-2P 172285-81-3P 172285-85-7P**
(phenylanthracene derivs. and org. **electroluminescent** elements)
RN 172285-80-2 HCA
CN 9,9'-Bianthracene, 10,10'-bis(3-methylphenyl)- (9CI) (CA INDEX NAME)



RN 172285-81-3 HCA
CN 9,9'-Bianthracene, 10,10'-bis(pentamethylphenyl)- (9CI) (CA INDEX NAME)



RN 172285-85-7 HCA
CN 9,9'-Bianthracene, 10,10'-bis(2-methoxyphenyl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
ICS H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, 76
ST phenylanthracene deriv **electroluminescent** device
IT **Electroluminescent** devices
(phenylanthracene derivs. and org. **electroluminescent** elements)
IT 65181-78-4
(phenylanthracene derivs. and org. **electroluminescent** elements)
IT 2085-33-8, Tris(8-quinolinolato)aluminum 15570-45-3 51325-05-4, Poly(thiophene-2,5-diyl) 169224-61-7
(phenylanthracene derivs. and org. **electroluminescent** elements)
IT 172285-72-2P 172285-73-3P 172285-76-6P
(phenylanthracene derivs. and org. **electroluminescent** elements)
IT 23102-67-2P 120335-70-8P 172285-74-4P 172285-75-5P
172285-77-7P 172285-78-8P 172285-79-9P **172285-80-2P**
172285-81-3P 172285-82-4P 172285-83-5P 172285-84-6P
172285-85-7P 172285-86-8P 172285-87-9P 172285-88-0P
172285-89-1P
(phenylanthracene derivs. and org. **electroluminescent**

elements)

IT 84-65-1, Anthraquinone 366-18-7, 2,2'-Bipyridine 434-85-5, Bianthrone 1295-35-8, Bis(1,5-cyclooctadiene)nickel 3001-15-8, 4,4'-DiIodobiphenyl 4294-57-9, 4-Methylphenylmagnesium bromide 43217-27-2, 1-Chloro-9,10-diphenylanthracene 43217-28-3, 2-Chloro-9,10-diphenylanthracene
(phenylanthracene derivs. and org. **electroluminescent** elements)